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PATENT APPLICATION

ATTORNEY DOCKET NO. 200314345-1

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): John A. WOZNAK

Confirmation No.: 1952

Application No.: 10/729,501

Examiner: Boateng, Alexis Asiedua

Filing Date: December 5, 2003

Group Art Unit: 2838

Title: BATTERY PACK WITH PROTECTION CIRCUIT

Mail Stop Appeal Brief - Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF REPLY BRIEF

Transmitted herewith is the Reply Brief with respect to the Examiner's Answer mailed on October 27, 2006.

This Reply Brief is being filed pursuant to 37 CFR 1.193(b) within two months of the date of the Examiner's Answer.

(Note: Extensions of time are not allowed under 37 CFR 1.136(a))

(Note: Failure to file a Reply Brief will result in dismissal of the Appeal as to the claims made subject to an expressly stated new ground rejection.)

No fee is required for filing of this Reply Brief.

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Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

**APPEAL FROM THE EXAMINER TO THE BOARD
OF PATENT APPEALS AND INTERFERENCES**

In re Application of: John A. WOZNIAK

Confirmation No: 1952

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MAIL STOP: APPEAL BRIEF-PATENTS

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

Dear Sir:

REPLY BRIEF

Appellants respectfully submit this Reply Brief in response to the Examiner's
Answer mailed October 27, 2006, pursuant to 37 C.F.R. § 1.193(b).

STATUS OF CLAIMS

Claims 1-38 stand rejected pursuant to a Final Office Action mailed February 8, 2006. Claims 1-38 are presented for appeal.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL¹

1. Claim 1 was rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,060,185 issued to Okutoh (hereinafter "*Okutoh*").
2. Claims 10, 11, 13, 14, 30 and 31 were rejected under 35 U.S.C. § 102(a) as being anticipated by U.S. Patent No. 6,501,248 issued to Fujiwara (hereinafter "*Fujiwara*").
3. Claims 15, 19 and 20 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,534,953 issued to Shirakawa (hereinafter "*Shirakawa*").
4. Claims 2, 4, 5 and 9 were rejected under 35 U.S.C. 103(a) as being unpatentable over *Okutoh* in view of *Fujiwara*.
5. Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Okutoh* in view of *Shirakawa*.
6. Claims 6 and 7 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Okutoh* in view of U.S. Patent No. 5,963,019 issued to Cheon (hereinafter "*Cheon*").
7. Claim 8 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Okutoh* in view of U.S. Publication No. 2004/0062387 issued to O'Connor (hereinafter "*O'Connor*").
8. Claim 12 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Fujiwara* in view of *Shirakawa*.
9. Claims 16, 24 and 25 was rejected under 35 U.S.C. §103(a) a being unpatentable over *Shirakawa* in view of *Fujiwara*.

¹ Appellant notes that in the Final Office Action mailed February 8, 2006, the Examiner rejected Claims 19 and 20 under 35 U.S.C. § 103(a) (see page 8 of the Final Office Action). In the Examiner's Answer, Appellee appears to have changed the ground of rejection for Claims 19 and 20 such that Claims 19 and 20 are now rejected under 35 U.S.C. § 102(b) (see page 4 of the Examiner's Answer). The above listing of the Grounds of Rejection to be Reviewed on Appeal reflects Appellee's change of the ground of rejection for Claims 19 and 20.

10. Claims 17 and 18 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Shirakawa* in view of U.S. Patent No. 6,046,575 issued to Demuro (hereinafter "*Demuro*").

11. Claims 22, 33 and 38 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Shirakawa* and *Fujiwara* in view of U.S. Patent Publication No. 2003/0080747 issued to Huelss (hereinafter "*Huelss*").

12. Claims 21, 23 and 34 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Shirakawa* and *Fujiwara* in view of U.S. Publication No. 2003/0117143 issued to Okada (hereinafter "*Okada*").

13. Claims 26, 28, 29, 35 and 37 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Shirakawa* and *Fujiwara* in view of *Cheon*.

14. Claims 27 and 36 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Shirakawa* and *Fujiwara* in view of U.S. Patent No. 6,492,791 issued to Saeki (hereinafter "*Saeki*").

15. Claim 32 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Fujiwara* in view of *Shirakawa*.

ARGUMENT

1. 35 U.S.C. § 102(b) Rejection over *Okutoh*

a. Claim 1

In the Examiner's Answer, the Appellee appears to assert that because an excessive current condition corresponding to a load external to a battery pack is passed through the battery pack, the limitations of independent Claim 1 are met by *Okutoh* (Examiner's Answer, page 13). Appellant disagrees. In particular, the Appellee states:

Any current "associated" with the load is associated with the components [of the battery pack].

(Examiner's Answer, page 13). In *Okutoh*, the elements forming the *Okutoh* battery pack appear to be used to detect an excessive current condition caused by a load external to the battery pack (*Okutoh*, column 3, lines 40-46). Thus, the excessive current condition in *Okutoh* is not caused by the elements forming the *Okutoh* battery pack but, instead, is an excessive current by the external load. Claim 1 recites a protection circuit for detecting "an excessive current consumption condition associated with electronic components forming the battery pack." The Appellee appears to equate "sensing" current with "consumption" of current, which is improper. Independent Claim 1 is directed toward determining an amount of current that is being used or "consumed" by the components forming the battery pack. The battery pack of *Okutoh* does not detect, nor does it appear capable of detecting, excessive current consumption associated with components forming the battery pack as recited by Claim 1. Even though excessive current may be sensed in the battery pack of *Okutoh* (e.g., corresponding to an external load), excessive current consumption by the components forming the battery pack is not determined in *Okutoh*. Accordingly, Appellant respectfully submits that *Okutoh* does not anticipate independent Claim 1.

2. 35 U.S.C. § 102(a) Rejection over *Fujiwara*

a. Claims 10, 11, 13 and 14

Regarding independent Claim 10, the Appellee appears to use the same basis for *Fujiwara* as indicated above with respect to *Okutoh*, namely, that because an excessive current condition corresponding to a load external to a battery pack is passed through the battery pack, the limitations of independent Claim 10 are met by *Fujiwara* (Examiner's Answer, pages 13 and 14). Appellant disagrees. Independent Claim 10 recites:

at least one battery cell means coupled to electronic components forming the battery pack; and means for detecting an excessive current consumption condition associated with the electronic components [forming the battery pack]."

In the Examiner's Answer, Appellee relies on the battery cell 30 of *Fujiwara* as corresponding to the "battery cell means" recited by Claim 10, and the items 51, 52 and 53 of *Fujiwara* as corresponding to the "components forming the battery back" as recited by Claim 10 (Examiner's Answer, page 3). *Fujiwara* recites:

The discharge-[state] overcurrent detector 13 detects a discharge-state overcurrent condition of the battery 30 when the battery pack 1 is set in the discharge state. . . . The charge-state overcurrent detector 21 detects a charge-state overcurrent condition of the battery 30 when the battery pack 1 is set in the charge state.

(*Fujiwara*, column 6, lines 26-39) (emphasis added). Thus, the portion of *Fujiwara* referred to by the Examiner appears to be directed toward a current condition of the battery 30 of the battery pack of *Fujiwara* and not a current consumption condition of components 51, 52 and 53 of the battery pack of *Fujiwara* that are coupled to the battery 30 of *Fujiwara*. Further, even though excessive current may be sensed in the battery pack of *Fujiwara*, excessive current consumption by the components forming the battery pack that are coupled to a battery cell is not determined in *Fujiwara*. The Appellee appears to equate "sensing" current with "consumption" of current, which is improper. Independent Claim 10 is directed toward detecting an amount of current used or "consumed" by the components forming the battery pack. *Fujiwara* does not disclose or even suggest this. Accordingly, Appellant respectfully submits that Claim 10, and Claims 11, 13 and 14 that depend therefrom, are patentable over *Fujiwara*.

b. Claims 30 and 31

Independent Claim 30 recites "a battery core pack" and "a protection circuit adapted to distinguish between current consumption associated with electronic components coupled to the battery core pack and forming the battery pack and current flow associated with the host device to determine whether an excessive current consumption condition exists associated with the electronic components of the battery pack" (emphasis added). The Appellee appears to equate "sensing" current with "consumption" of current, which is improper. Independent Claim 30 is directed toward detecting an amount of current used by or "consumed" by electronic components of the battery pack that are coupled to the battery. As indicated above with respect to independent Claims 1 and 10, the Appellee relies on the following to

maintain the rejection of Claims 30 and 31: "Any current 'associated' with the load is associated with the components [of the battery pack]" (Examiner's Answer, page 14). In *Fujiwara*, the excessive current condition appears to relate to a battery charger 40 (*Fujiwara*, figure 1). Thus, even though excessive current may be sensed in the battery pack of *Fujiwara*, excessive current consumption by the components forming the battery pack and connected to a battery cell is not determined in *Fujiwara*. Moreover, even based on the Appellee's reasoning for rejecting Claims 30 and 31 (i.e., that excessive current corresponding to a load external to a battery pack is passed through the battery pack), *Fujiwara* stills falls short of disclosing or even suggesting the limitations of independent Claim 30 at least because there appears to be no distinction in *Fujiwara* between the Appellee's asserted current corresponding to an external load and the current passing through the battery pack of *Fujiwara* (i.e., the same current flow). Thus, Appellant respectfully submits that *Fujiwara* does not disclose or even suggest "a protection circuit adapted to distinguish between current consumption associated with electronic components coupled to the battery core pack and forming the battery pack and current flow associated with the host device" as recited by independent Claim 30 (emphasis added). Accordingly, for at least these reasons, Appellant respectfully submits that independent Claim 30, and Claim 31 that depends therefrom, are patentable over *Fujiwara*.

3. 35 U.S.C. § 102(b) Rejection over *Shirakawa*

a. Claims 15, 19 and 20

In the Examiner's Answer, Appellee asserts that because charge current received from an external source is sensed by the battery pack being charged, *Shirakawa* anticipates independent Claim 15 (Examiner's Answer, page 15). Appellant respectfully disagrees. Claim 15 is directed toward detecting an excess current consumption condition by electronic components of the battery pack that are coupled to the battery. For example, independent Claim 15 recites "a battery core pack coupled to electronic components forming the battery pack" and "an integrated circuit adapted to compare potentials across at least two different current sensors to detect an excessive current consumption condition associated with the electronic components" (emphasis added). In the Examiner's Answer, the Appellee repeatedly uses the term "sensed" in the context of sensing a current and automatically equates "sensing" a current to "consumption" of current ("the current sensed from the battery pack is current that is associated with the electronic components;" "current is sensed from the charged power sources and supplied to the battery core pack;" "the current sensed from the battery pack is current that is associated with the electronic

components because the battery pack is coupled to these electronic components" (Examiner's Answer, page 15) (emphasis added). Thus, the Appellee appears to equate "sensing" current with "consumption" of current, which is improper. Independent Claim 15 is directed toward determining the amount of current used by or "consumed" by the electronic components forming the battery pack for their operation, which is neither disclosed or suggested by *Shirakawa*. Accordingly, Appellant respectfully submits that independent Claim 15, and Claims 19 and 20 that depend therefrom, are patentable over *Shirakawa*.

4. 35 U.S.C. § 103(a) Rejection over *Okutoh* in view of *Fujiwara*

a. Claims 2, 4, 5 and 9

Appellant respectfully repeats and maintains the arguments presented in Appellant's Appeal Brief regarding Claims 2, 4 and 5, and Appellant respectfully submits that Claims 2, 4, 5 and 9 are patentable over the cited references.

5. 35 U.S.C. § 103(a) Rejection over *Okutoh* in view of *Shirakawa*

a. Claim 3

Appellant respectfully repeats and maintains the arguments presented in Appellant's Appeal Brief regarding Claim 3, and Appellant respectfully submits that Claim 3 is patentable over the cited references.

6. 35 U.S.C. § 103(a) Rejection over *Okutoh* in view of *Cheon*

a. Claims 6 and 7

Appellant respectfully repeats and maintains the arguments presented in Appellant's Appeal Brief regarding Claims 6 and 7, and Appellant respectfully submits that Claims 6 and 7 are patentable over the cited references.

7. 35 U.S.C. § 103(a) Rejection over *Okutoh* in view of *O'Connor*

a. Claim 8

Appellant respectfully repeats and maintains the arguments presented in Appellant's Appeal Brief regarding Claim 8, and Appellant respectfully submits that Claim 8 is patentable over the cited references.

8. 35 U.S.C. § 103(a) Rejection over *Fujiwara* in view of *Shirakawa*

a. Claim 12

Appellant respectfully repeats and maintains the arguments presented in Appellant's Appeal Brief regarding Claim 12, and Appellant respectfully submits that Claim 12 is patentable over the cited references. Further, in the Examiner's Answer,

the Appellee states that the "appellant also agrees that it would have been obvious to one of ordinary skill to modify the *Fujiwara* system with the *Shirakawa* system" (Examiner's Answer, page 18). Appellant has made no such statement and, in fact, Appellant expressly disagreed with the Appellee's assertion as indicated on at least page 16 of Appellant's Appeal Brief.

9. 35 U.S.C. § 103(a) Rejection over *Shirakawa* in view of *Fujiwara*

a. Claims 16, 24 and 25

Appellant respectfully repeats and maintains the arguments presented in Appellant's Appeal Brief regarding Claims 16, 24 and 25, and Appellant respectfully submits that Claims 16, 24 and 25 are patentable over the cited references.

10. 35 U.S.C. § 103(a) Rejection over *Shirakawa* in view of *Demuro*

a. Claims 17 and 18

Appellant respectfully repeats and maintains the arguments presented in Appellant's Appeal Brief regarding Claims 17 and 18, and Appellant respectfully submits that Claims 17 and 18 are patentable over the cited references.

11. 35 U.S.C. § 103(a) Rejection over *Shirakawa*, *Fujiwara* and *Huelss*

a. Claims 22, 33 and 38

Appellant respectfully repeats and maintains the arguments presented in Appellant's Appeal Brief regarding Claims 22, 33 and 38, and Appellant respectfully submits that Claims 22, 33 and 38 are patentable over the cited references.

12. 35 U.S.C. § 103(a) Rejection over *Shirakawa*, *Fujiwara* and *Okada*

a. Claims 21, 23 and 34

Appellant respectfully repeats and maintains the arguments presented in Appellant's Appeal Brief regarding Claims 21, 23 and 34, and Appellant respectfully submits that Claims 21, 23 and 34 are patentable over the cited references.

13. 35 U.S.C. § 103(a) Rejection over *Shirakawa*, *Fujiwara* and *Cheon*

a. Claims 26, 28, 29, 35 and 37

Appellant respectfully repeats and maintains the arguments presented in Appellant's Appeal Brief regarding Claims 26, 28, 29, 35 and 37, and Appellant respectfully submits that Claims 26, 28, 29, 35 and 37 are patentable over the cited references.

14. 35 U.S.C. § 103(a) Rejection over *Shirakawa, Fujiwara and Saeki*

a. Claims 27 and 36

Appellant respectfully repeats and maintains the arguments presented in Appellant's Appeal Brief regarding Claims 27 and 36, and Appellant respectfully submits that Claims 27 and 36 are patentable over the cited references.

15. 35 U.S.C. § 103(a) Rejection over *Fujiwara* in view of *Shirakawa*

a. Claim 32

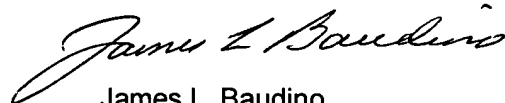
Appellant respectfully repeats and maintains the arguments presented in Appellant's Appeal Brief regarding Claim 32, and Appellant respectfully submits that Claim 32 is are patentable over the cited references.

CONCLUSION

Appellant has demonstrated that the present invention as claimed is clearly distinguishable over the art cited of record. Therefore, Appellant respectfully requests the Board of Patent Appeals and Interferences to reverse the final rejection of the Examiner and instruct the Examiner to issue a notice of allowance of all claims.

No fee is believed due with this Reply Brief. If, however, Appellant has overlooked the need for any fee, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 08-2025 of Hewlett-Packard Company.

Respectfully submitted,



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Registration No. 43,486

Date: December 14, 2006

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